PORTABLE COMPUTER HAVING TWO DISPLAY UNITS

FIELD OF THE INVENTION

The present invention relates to a portable computer comprising a base unit having an upper surface on which a lid is hinged, an electronic unit housed in the base unit and capable of assuming various operational states, an input unit for controlling the electronic unit and a display screen carried by the lid and controlled by the electronic unit to display graphics symbols and alphanumeric characters over several lines and, in which the lid can be positioned between a closed configuration and an open configuration and in which the lid, in its closed configuration, is superimposed over the upper surface of the base unit thereby protecting the input unit and screen and, in its open configuration, allows access to the input unit and enables the display screen to be seen.

BACKGROUND OF THE INVENTION

Many examples of portable computers of this type are known in which, inevitably, it is only possible to view visual information as to the operational state of the electronic unit when the lid is in its open configuration and the display screen is visible.

European Patent Application No. EP-A-0,419,177 discloses one example of a computer of the type defined above which is battery-powered and in which various operational states of its electronic unit are provided. These states concern audio signal processing. In particular, the functions connected with recording and playback can be preset using buttons on one side of the computer which can be actuated when the lid is closed. In the recording state, the audio signals coming from a microphone are recorded in a memory by the computer after they have undergone analogue/digital conversion. Conversely, in the playback state, the signals recorded in the memory are played back by a speaker, after they have undergone digital/analogue conversion. In this example, no visual information is available as to the state of the electronic unit after the buttons have been actuated. This proves to be a particular disadvantage with respect to the functional autonomy provided by the batteries if the computer is in an operation state which has been mistakenly selected

SUMMARY OF THE INVENTION

Preferred embodiments of the invention provide a portable computer fitted with a lid to protect the screen and in which it is possible to view the operational state of the electronic unit when the lid is closed.

One embodiment of the invention provides a computer in which a mode indicator is carried by the base unit for displaying symbols and characters which indicate the operational state of the computer. The lid is provided with a viewing zone, external to the display, through which the mode indicator may be viewed when the lid is in its closed position. The mode indicator is usually smaller in size than the display screen.

In another embodiment of the invention the computer includes an audio processing unit. The lid carries a series of presetting keys which are accesible when the lid is closed. These can be used to preset various operational states of the computer such as record or playback for the audio processing unit.

The invention in its various aspects is defined in more detail in the appended claims to which reference should now be made.

BRIEF DESCRIPTION OF THE DRAWINGS

Preferred embodiments of the invention will now be described in detail by way of example with reference to the drawings in which:

FIG. **1** shows a perspective view of the computer according to the invention in its working configuration;

FIG. **2** shows a perspective view of the computer in FIG. **1** in a different working configuration;

FIG. **3** shows a detail from the computer in FIG. **1**;

FIG. **4** shows an electrical block diagram of the computer of the invention;

FIG. **5** shows a view of the detail of the computer in FIG. **1**; and

FIG. **6** is a detail of the electrical diagram in FIG. **4**.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

With reference to FIGS. **1** to **4**, the portable computer, referenced **31**, is of the multifunctional type and comprises a base unit **32**, a lid **33** hinged to the base unit **32** and which can be positioned between a closed configuration (FIG. **2**) and an open configuration (FIG. **1**), an electronic unit **34**, housed in the base unit **32** and comprising keys **35** on a keyboard **36**, for controlling the electronic unit **34**, and a display screen **37** carried by the lid **33** and controlled by the electronic unit **34** to display graphic symbols and alphanumeric characters over several lines.

The base unit **32** has a substantially parallelepipedal, somewhat flattened, shape and has an upper surface **38** which is horizontal in use, a bottom **39**, a front part **40**, a rear part **41**, a right side **42** and a left side **43**. The lid **33** has a front surface **44** and the screen **37** is of the flat type and covers most of the surface **44**.

The lid **33**, in its closed configuration, superimposes the surface **44** over the upper surface **38** of the base unit **32**, thereby protecting the keyboard **36** and the screen **37**. In its open configuration, the lid can assume various positions about a vertical position, allowing access to the keyboard **36** and enabling the display screen **37** to be seen. In particular, the base unit **32** (FIG. **1**) has an edge on which the lid **33** is hinged on the rear part **41** and on the upper surface **38** and the lid **33** has an edge on which the unit **32** is hinged on one of its rear edges.

The computer **31** also comprises a mode indicator **46**, smaller in size than the screen **37** and carried by the base unit **32**, for displaying characters and symbols indicating various operational states of the computer. The lid **33** in turn comprises a viewing zone **47**, in its lower part external to the screen **37**, so that the mode indicator **46** can still be seen when the lid is in the closed configuration (FIG. **2**).

The mode indicator **46** comprises a display panel of the liquid crystal type which is adjacent to the hinged edge of the base unit. The viewing zone **47** is adjacent to the hinged edge of the lid **33** and is provided so that the indicator **46** can still be seen when the lid is in its open configuration. Flat, flexible cables **45** in turn connect the electronic unit **34** inside the unit **32** to the screen **37**, across the hinging zone between the unit **32** and the lid **33**.